

Terrestrial Mites of New York II. Mites in Birds' Nests (Acarina)¹

E. W. BAKER

SYSTEMATIC ENTOMOLOGY LABORATORY, IIBIII, ARS, USDA, BELTSVILLE, MARYLAND 20705

M. D. DELFINADO

NEW YORK STATE MUSEUM & SCIENCE SERVICE, ALBANY, NEW YORK 12234

AND

M. J. ABBATIELLO

STATE UNIVERSITY OF NEW YORK AT FARMINGDALE, LONG ISLAND, NEW YORK 11735

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Abstract: Twenty-one species of mites belonging to eight families are reported found in nests of birds from New York; three are new to science: *Cheiroseius hurlbutti* n. sp., *Lasioseius tridentatus* n. sp. and *Pellonyssus nidicolus* n. sp. The fauna includes important biting and stored products species, and those associated with house-dust allergy. *Tyrophagus longior* (Gervais) (Acaridae) and *Dermatophagoides evansi* (Fain), Hughes & Johnston are the two most common mites found in birds' nests. The male of *Sturnophagoides bakeri* (Fain) is described for the first time. Notes and information on distribution and habitats are provided, together with illustrations of certain species. *Gamaselodes americanus* (Garman) is a new synonym of *Gamaselodes bicolor* (Berlese).

Woodroffe and Southgate (1951) and Woodroffe (1953, 1954) studied the importance of birds' nests as sources of household and stored products pests in Britain and confirmed the existence of such wide-spread natural populations of these pests. The faunal list included important species of mites found in stored cereal products and house dusts, such as *Glycyphagus domesticus* (de Geer) (Glycyphagidae) and *Dermatophagoides* sp. (Pyroglyphidae). The present collection is of interest because, firstly, the bird nest mite fauna has not been investigated in this country, and secondly, the results of this survey confirmed the occurrence in nests of the more important stored products species and those associated with house-dust allergy.

This paper is the second in a series containing descriptions and records of terrestrial mites from New York. It reports 21 species belonging to 8 families of mites found in nests of birds: Glycyphagidae (1 sp.), Acaridae (5

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spp.), Pyroglyphidae (2 spp.), Macronyssidae (3 spp.), Dermanyssidae (1 sp.), Ascidae (7 spp.), Digamasellidae (1 sp.), and Veigaiaidae (1 sp.). Many of the species have not been previously recorded and 3 are new to science. *Tyrophagus longior* (Gervais) (Acaridae) and *Dermatophagoides evansi* Fain, Hughes & Johnston (Pyroglyphidae) are the dominant and most abundant species found in nests of birds.

Abandoned birds' nests were collected during the summer and fall of 1973 on Long Island and in the Mohawk Valley area, New York. Many of the nests were obtained from fruit trees, eaves of buildings and in bird houses. In most cases the nests were not identified. The mites were extracted from the nests by the use of Berlese funnels.

Glycyphagidae

Aeroglyphus robustus (Banks)

(Figures 1-14)

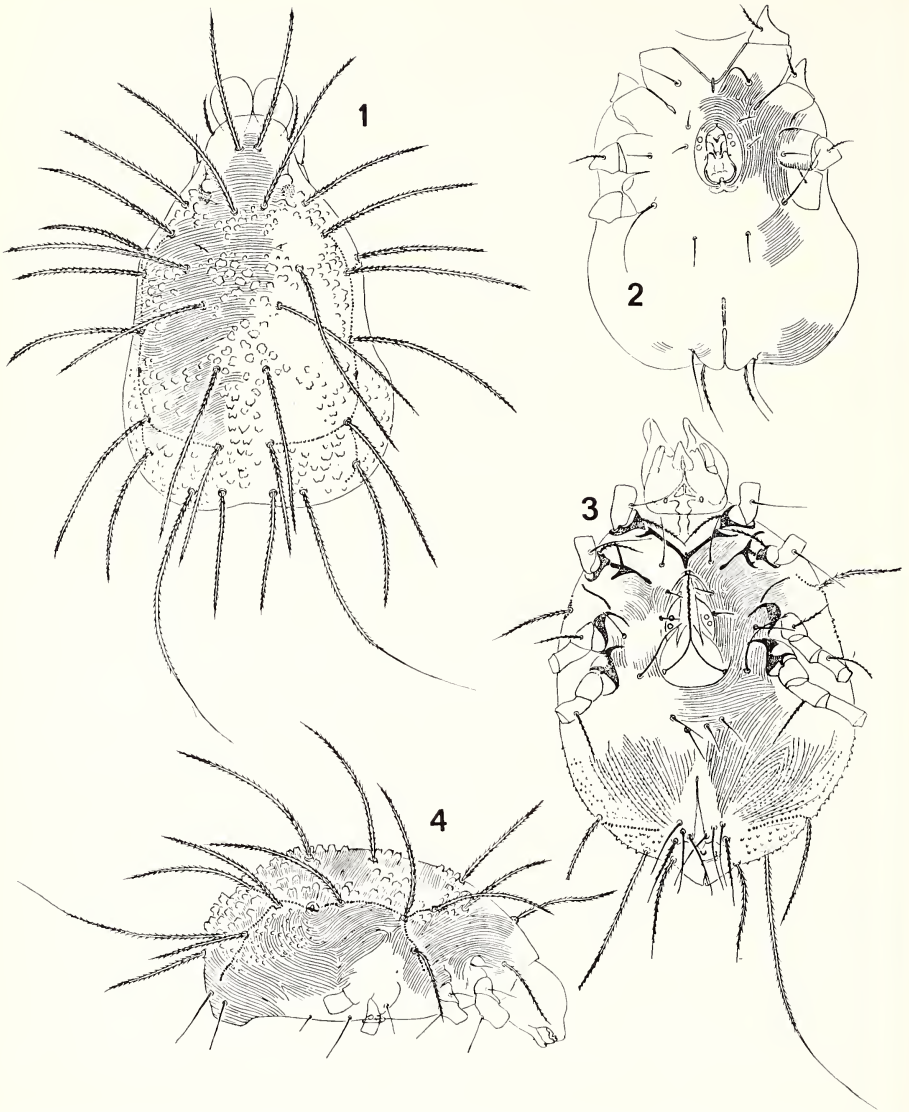
Glyciphagus (sic) *robustus* Banks, 1906, Bur. Entomol. USDA Tech. Ser. 13: 13.

Aeroglyphus robustus, Cooreman, 1959, Bull. Inst. R. nat. Belg. 35: 10.

Remarks. Zakhvatkin (1941) established the genus *Aeroglyphus* for a single species, *Glyciphagus peregrinans* Berlese, 1892, and indicated that *Glyciphagus robustus* Banks, a North American species, could also belong to this genus. The inadequate original description of *robustus* made its generic placement uncertain. Cooreman (1959) re-described and figured *robustus* and placed it in *Aeroglyphus*. Because *robustus* is a wide spread and seemingly important species, we are providing detailed illustrations of both sexes and nymph for easy identification.

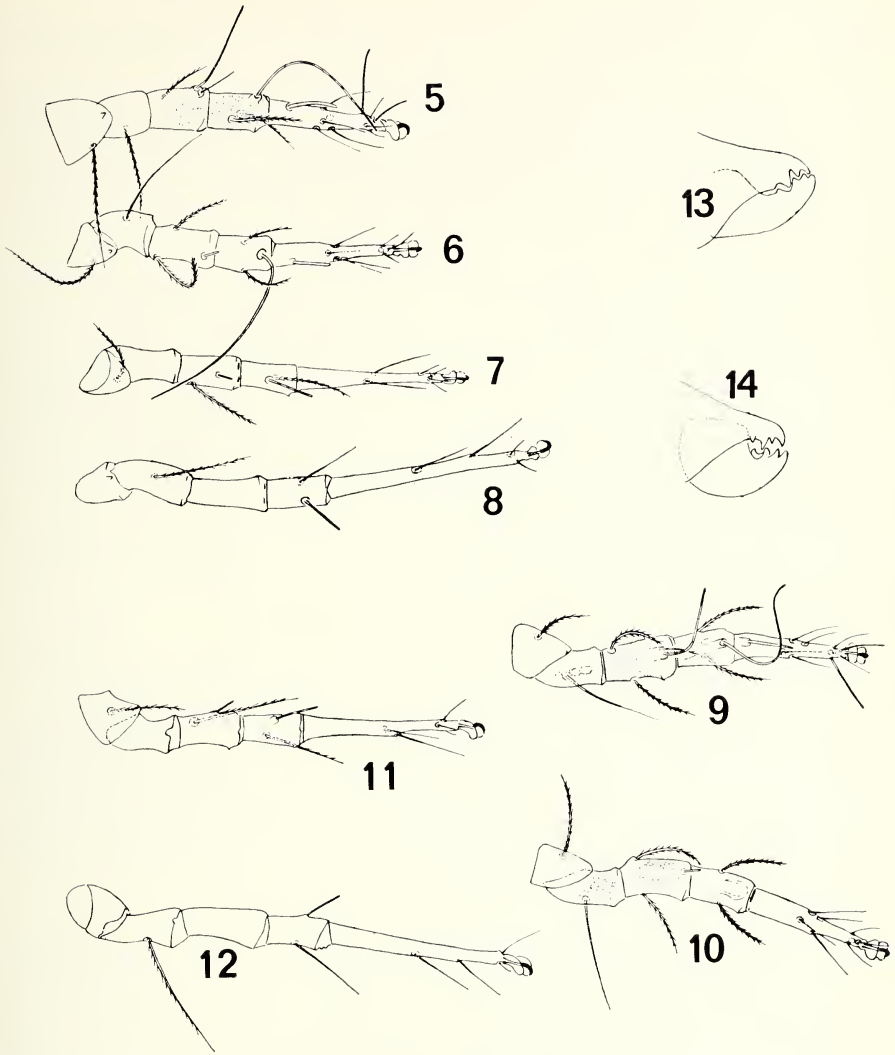
A. robustus is distinguished from *A. peregrinans* (Berlese), the only other species in the genus, by the dorsal ornamentation of the idiosoma which is covered with fine striations and large crenulate tubercles or papillae of varying sizes, and with a row of sawlike teeth laterally connecting setae h_1 , h_e , l_a , l_p , sae and d_4 and continuing ventrally to the anal region; anteriorly this line goes beyond the humeral setae ventrally; all dorsal setae are very long and pectinate. This mite is found in a wide variety of natural habitats. *A. peregrinans* has been found only on the hymenopterous genera *Xylocopa* and *Bombus* in Europe (Zakhvatkin, 1941 (1959); Cooreman, 1959).

Distribution. *Aeroglyphus robustus* was originally taken "in a lot of seeds" from Ohio. It is now found in a wide variety of habitats and is known to cause itching of human skin. Recorded by Cooreman (1959) from Rensselaerville, New York on a eumenine wasp; our specimens were taken from birds' nests at Saratoga and Helderberg, New York, July 26, 1973, May 18, 1973 (M. Delfinado, coll.), and Stoughton, Massachusetts, August 1, 1974 in nests of birds near house (E. W. Baker & M. D. Delfinado, coll.). The USNM collection contains specimens from Washington, D.C., December



Acroglyphus robustus (Banks), Figs. 1-14. 1. dorsum of male; 2. venter of male; 3. venter of female; 4. lateral view of nymph; 5. leg I of male; 6. leg II of male; 7. leg III of male; 8. leg IV of male; 9. leg I of female; 10. leg II of female; 11. leg III of female; 12. leg IV of female; 13. chelicerae of male; 14. chelicerae of female.

8, 1958, in ant nest refuse (T. Silvey, coll.); Hunter, North Dakota, November 15, 1948, on barley (Post & Anderson, coll.); Washington, D.C., September 17, 1954, in *G. melonella* culture in bees wax (J. L. Nickel, coll.); Lovain, Ohio, July 1953, in insect trash from window sill (J. Arnold, coll.);



Figs. 1-14. Continued.

Boxford, Massachusetts, August 18, 1961, on Tabanidae trapped in spider web in a garage (no coll.); Mocksville, North Carolina, December 28, 1963, in soybean hay causing itch on person (J. C. Harding, coll.).

Acaridae

Tyrophagus longior (Gervais)

Tyroglyphus longior Gervais, 1844, Hist. nat. Ins. 3: 262.

Tyrophagus longior, Zakhvatkin, 1941, Zool Inst. Acad. Sci. USSR (N. Ser.) 28: 109

(1959:147); Baker and Wharton, 1952, *Introd. Acarology*: 335; Robertson, 1959, *Aust. Jour. Zool.* 7: 165.

Remarks. Robertson (1959) reviewed the genus *Tyrophagus* and gave an excellent characterization of *longior*. It is similar to *T. putrescentiae* (Schrank), but the shape of the aedeagus and the pseudostigmatic organ and the arrangement of the postanal setae are distinctive for *longior*; also the first pair of postanal setae in *longior* are very short, not reaching the posterior margin of the idiosoma, whereas these setae are very long in *putrescentiae*.

Distribution. *T. longior* has been recorded in a wide variety of natural habitats but not in nests. It is found primarily on cheeses in Europe, England, Canada and New Zealand (See Roberston, 1959:167). Baker and Wharton (1952:335) mentioned that *longior* "has been taken occasionally in America". The USNM collection contains specimens from Sand Lake, Oregon, August 26, 1947 (R. W. Every, coll.) in hay; Wilmington, North Carolina, February 19, 1946 (W. M. Kulash, coll.) on chickens and in house. Numerous specimens were taken from all birds' nests at Farmingdale, Long Island, New York, June 30, and July 14, 1973 (M. D. Delfinado & M. Abbatiello, coll.). It is the most common mite so far found in birds' nests.

Acarus siro Linnaeus

Acarus siro Linnaeus, 1758, *Syst. Nat.*, Ed. 10, 1: 616; Griffiths, 1964, *Bull. Brit. Mus. nat. Hist. Zool.* 11: 432,434; Griffiths, 1970, *Bull. Brit. Mus. nat. Hist. Zool.* 19: 92.

Remarks. *A. siro* is the well-known flour mite. According to Griffiths (1964: 458) *A. siro* appears to be the dominant species within stored products living on processed cereals as well as whole grains, and he believes that many published records of the occurrence of *A. siro* in natural habitats may be based on misidentifications. For clarification of this species see Griffiths (1964, 1970).

Distribution. *A. siro* is found in stored grain, feed and grain dust in Washington, Oregon and New York and in cheese in Wisconsin; it has been taken on various stored products in Europe, Canada and Chile; it is also recorded from England in house martins' nests. Our specimens were taken in birds' nests at Farmingdale, Long Island, New York, June 30, 1973 (M. Abbatiello & M. D. Delfinado, coll.).

Schwiebia talpa Oudemans

Schwiebia talpa Oudemans, 1916, *Entomol. Bericht.* 4: 265, Hughes, 1957, *Proc. Zool. Soc. Lond.* 129: 293; Woodring 1966, *Proc. Louisiana Acad. Sci.* 29: 96.

Schwiebia pachyderma Zakhvatkin, 1941, *Zool. Inst. Acad. Sci. USSR (N. ser.)* 28: 203 (1959: 276).

Remarks. Hughes (1957) established the identity of *S. talpa* which is apparently a variable species. The females in the present collection show variation in the size of the dorsal propodosomal plate; the epimeres III-IV are free except in one specimen in which they

are fused with each other as in figure 3 of Hughes (1957:295); usually only one solenidion arises from genu I; in other specimens genu I have 2 solenidia. We have not seen the male of *S. talpa*. For other details on this species see Hughes 1957).

Distribution. This species, tentatively identified as *talpa* by Woodring (1966: 108) has been found in Hawaii, Oregon, Mexico and Brazil on plants, seeds, roots and bulbs; Pillai & Winston (1963:53) found it in decaying plants and sod in Colorado. It has also been collected in soil and litter in Europe. We found 7 females in birds' nests at Farmingdale, Long Island, New York, June 30, 1973 (M. D. Delfinado & M. Abbatiello, coll.).

Schwiebia sp. probably *mertzis* Woodring, 1966.

A specimen from a bird's nest at Farmingdale, Long Island, New York is probably this species, but it is difficult to be certain on the basis of single, poor specimen. As in *mertzis* it lacks seta *ds*; *ba* on tarsus I is a large conical spine; genu I has 2 large spines, that is seta *MG* is a conspicuous stout spine as is *cG*.

Caloglyphus sp.

Only the hypopial forms were found in the nests of birds at Farmingdale, Long Island, and they are probably an undescribed species.

Pyroglyphidae

Dermatophagoides evansi Fain, Hughes & Johnston

Dermatophagoides evansi Fain, Hughes & Johnston in Fain, 1967a, *Acarologia* 9: 205.

Remarks. The female of *D. evansi* is distinguished from other members of the genus by the bulbous structure of the bursa copulatrix, and only the dorsal propodosomal plate is present; the male has both propodosomal and hysterosomal plates. For detailed description and figures of the species see Fain (1967a); van Bronswijk and Sinha (1971) gave a pictorial key for the identification of the species of the genus.

Distribution. The types of *D. evansi* were taken in feather pillows in England. Other specimens were found in a bird's nest (Icteridae) from Ohio, and nest of cave swallow in New Mexico. Our material was taken from all unknown birds' nests at Helderberg, New York, May 18, 1973 (M. D. Delfinado, coll.). It is the most common pyroglyphid mite found in birds' nests in New York. Wharton (1970) reported *evansi* in a house dust sample (no specific locality was given).

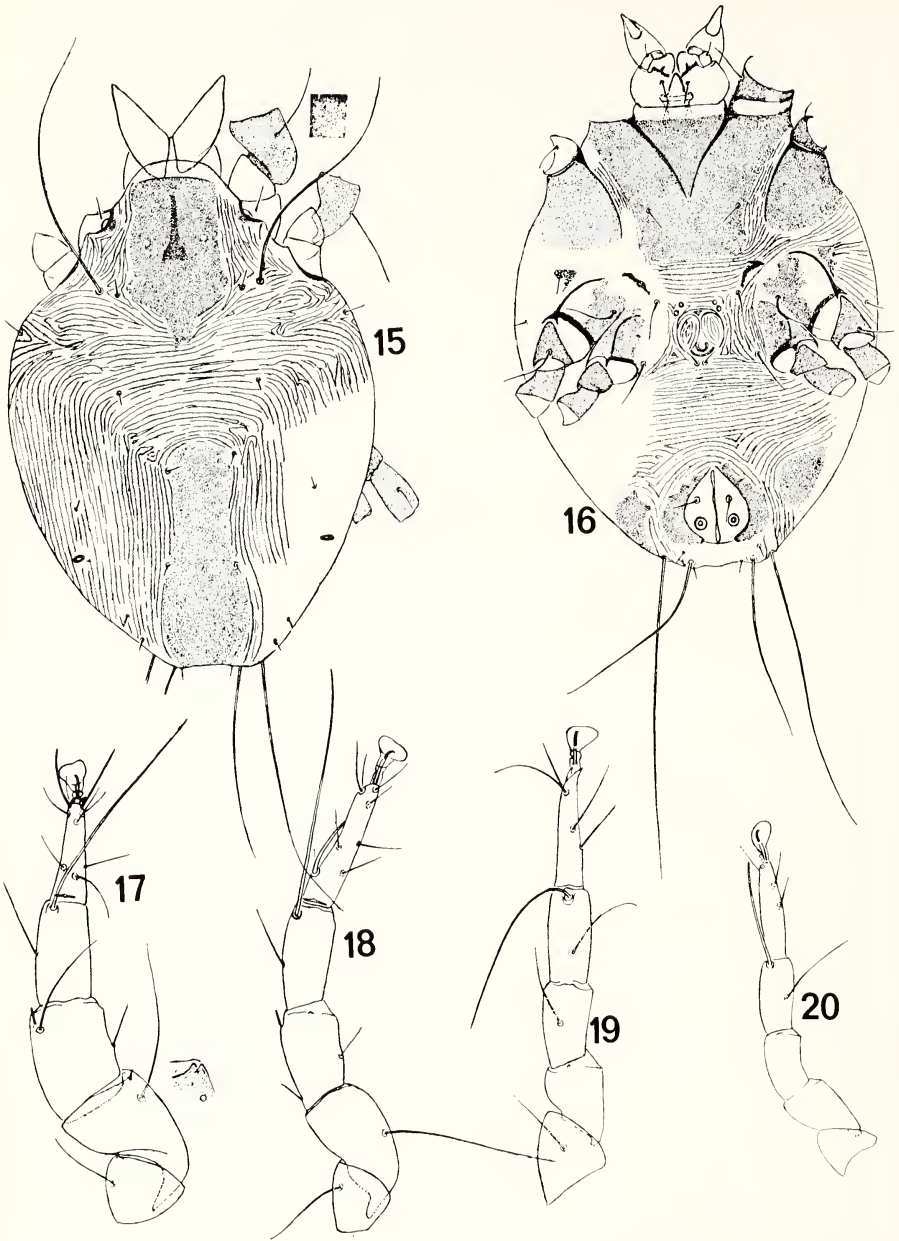
Sturnophagoides bakeri (Fain)

(Figures 15-25)

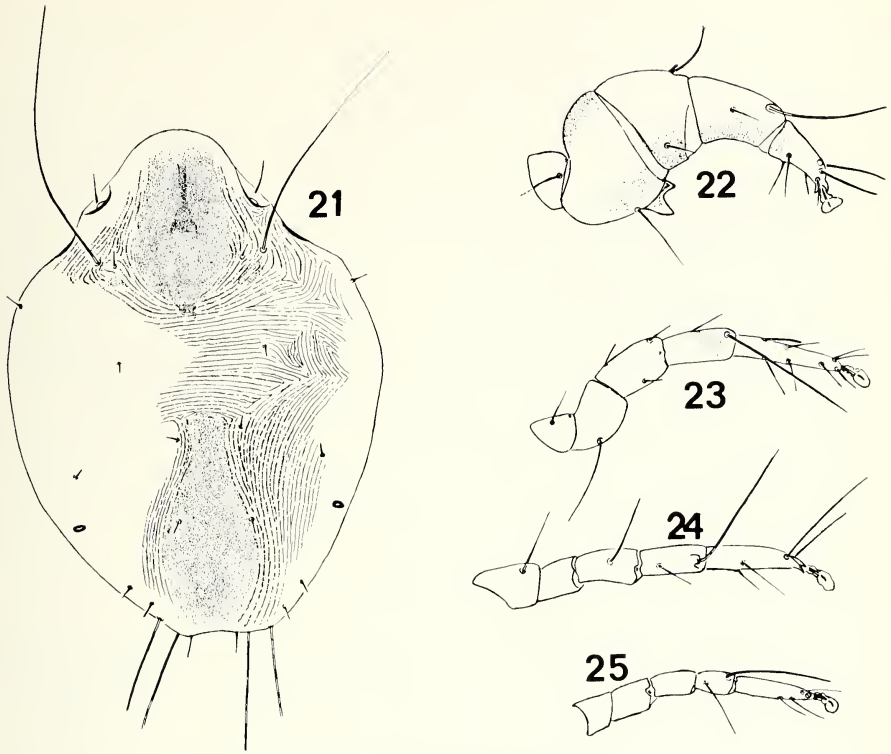
Dermatophagoides (Sturnophagoides) bakeri Fain, 1967a, *Acarologia* 9: 215.

Sturnophagoides bakeri, Fain, 1967b, *Acarologia* 9: 870,876; van Bronswijk and Sinha, 1971, *Jour. Allergy* 47: 52.

Remarks. Only the female has been described and figured for this species. The present collection contains both sexes found in nests of birds.



Sturnophagoides bakeri (Fain), Figs. 15-25. 15. dorsum of normal male; 16. venter of normal male; 17. leg I of normal male; 18. leg II of normal male; 19. leg III of normal male; 20. leg IV of normal male; 21. dorsum of heteromorphic male; 22. leg I of heteromorphic male; 23. leg II of heteromorphic male; 24. leg III of heteromorphic male; 25. leg IV of heteromorphic male.



Figs. 15-25. Continued.

Male. Similar to female in having both dorsal prodorsomal and hysterosomal plates present; scapular external setae not situated on sclerotized platelets. *S. bakeri* may be distinguished from other species in the genus by the shape of the dorsal plates, leg chaetotaxy and solenidiotaxy. Leg I in heteromorphic form with enlarged femur and genu and strong dentate lateral process on femur (figs. 21-25); in normal form leg I (figs. 15-20) small, not enlarged and similar to that of female, but with small dentate process on femur; also shapes of dorsal plates of this form differ slightly from those of the heteromorphic male. Chaetotaxy of legs I-IV of heteromorphic male (figs. 21-25): trochanters- 1, 1, 1, 0; femora- 1, 1, 0, 0; genua- 2, 3, 1, 0; tibiae- 1, 1, 1, 1; tarsi- 4, 7, 4, 3 (in normal form tarsus I possesses 6 setae); solenidiotaxy: genua- 1, 0, 0, 0; tibiae- 1, 1, 1, 1 (all very long); tarsi- 2, 1, 0, 0. Tarsi I & III of both forms ending in bifid clawlike organs; tarsi IV each with small suctional disc.

Distribution. This species was previously known from Virginia on starlings. Our collection contains specimens from Helderberg, New York, May 6 & 18, 1973, found in unidentified birds' nests (M. D. Delfinado, coll.); Stoughton, Massachusetts, August 1, 1974, found in birds' nests (M. D. Delfinado & E. W. Baker, coll.).

Macronyssidae

Ornithonyssus sylviarum (Canestrini & Fanzago)

Dermanyssus sylviarum Canestrini & Fanzago, 1877, Atti Ist. veneto 5: 124.

Ornithonyssus sylviarum, Sambon, 1928, Ann. trop. Med. Parasit. 22: 105; Baker, et al., 1956, Tech. Publ. Nat. Pest Cont. Assoc.: 26.

Macronyssus sylviarum, Zumpt & Till, in Zumpt, 1961, S. Afr. Inst. Med. Res. Publ. 1: 47.

Remarks. This mite is a serious pest of domestic fowl. In the absence of its normal hosts it will attack man causing itching. Encephalitis viruses (St. Louis and Western equine) have been isolated from specimens of *sylviarum* taken from wild bird nests (Hammon, et al., 1948). For further details see Baker, et al. (1956). *D. sylviarum* is similar in general appearance to *bacoti* (Hirst) and *bursa* (Berlese), but the dorsal chaetotaxy and shape of the dorsal plate are distinctive for *sylviarum*; also the sternal plate of *sylviarum* has 2 pairs of setae, the third pair being located posterior to the plate. There are always 3 pairs of setae on the sternal plate of *bacoti* and *bursa*.

Distribution. This species occurs throughout the temperate regions of the world on domestic fowl and many wild birds. Specimens in the present collection were taken in an oriole's nest at Delmar, New York, April 13, 1973 (M. D. Delfinado, coll.).

Pellonyssus nidicolus n. sp.

(Figures 26-28)

Female. Length of body 542 μ ; width 255 μ . Chelicerae very long and slender as shown in figure 28. Sternal plate very narrow, with faint striate pattern, 3 pairs of setae, the first pair shortest. Metasternal setae absent. Genital plate tapering to a point, with faint striate and reticulate pattern. Anal plate large, elongate, narrowing posteriorly and probably folded distally; anus situated at anterior $\frac{1}{3}$ of the length of anal plate; para-anal setae posterior margin of anus. All ventral and marginal setae on integument of idiosoma uniformly long and strong. Peritremes reaching about middle of coxa II. Dorsal plate divided between coxae III & IV, each piece large and covering entire body, with straight contiguous margins, indistinct striate pattern, margin of anterior plate indistinct. All dorsal setae uniformly long and strong. Chaetotaxy as in figure 26. Legs typical for the genus; coxal spur formula: 1-2-2-1.

Male. Unknown.

Holotype. A single female, Farmingdale, Long Island, New York, June 30, 1973, in a bird's nest (M.D. Delfinado & M. Abbatiello, coll.). Deposited in New York State Museum & Science Service, Albany.

Remarks. *P. nidicolus* is distinguished from all other species of *Pellonyssus* by the large, contiguous dorsal plates bearing uniformly long and strong dorsal setae; large anal plate, and uniformly long and strong ventral setae on the integument of idiosoma.

Dermanyssidae

Dermanyssus gallinae (de Geer)

Acarus gallinae de Geer, 1778, Mém. Hist. Ins. 7: 111.

Dermanyssus avium Dugés, 1834, Ann. Sci. nat. (Zool.) 1: 18 (*nom. nud.*, see Oudemans, 1936: 308).

Dermanyssus gallinae, Evans & Till, 1962, Ann. Mag. nat. Hist. (13) 5: 283; Evans & Till, 1966, Bull. Brit. Mus. nat. Hist. Zool. 14: 350; Moss, 1968, Jour. Med. Entomol. 5: 78,84.

Remarks. This species has been adequately described and figured by Evans & Till (1962, 1966) and Moss (1968), and a comprehensive account was provided by Baker, et al. (1956). *D. gallinae* is primarily an avian parasite of world-wide distribution. It is commonly recorded on domestic fowl, turkey, duck, pigeon, sparrow, starling and canary; and in the absence of its normal hosts it will attack mammals and man causing skin irritation.

Distribution. Cosmopolitan. Our specimens were taken in nests of birds from Stoughton, Massachusetts, August 1, 1974 (M. D. Delfinado & E. W. Baker, coll.); Albany, New York, July 23, 1973, in bird's nest on window sill (no coll.).

Hirstionyssus utahensis Allred & Beck

Hirstionyssus utahensis Allred & Beck, 1966, Brigham Young Univ. Sci. Bull. 8: 22.

Hirstionyssus (H.) utahensis, Herrin, 1970, Jour. Med. Entomol. 7: 419.

Remarks. The re-descriptions and figures of *H. utahensis* by Herrin (1970) are adequate for its identification. The characteristic feature of this species is the presence of stout and clawlike setae on tarsus II. Tarsus IV lacks spiniform setae. Coxal spur formula is as follows: 0-2-2-1.

Distribution. *H. utahensis* is common and widely distributed in the United States on small mammals (Herrin, 1970). A series of specimens was taken in the nests of birds at Helderberg, New York, May 18, 1973 (M. D. Delfinado, coll.).

Ascidae

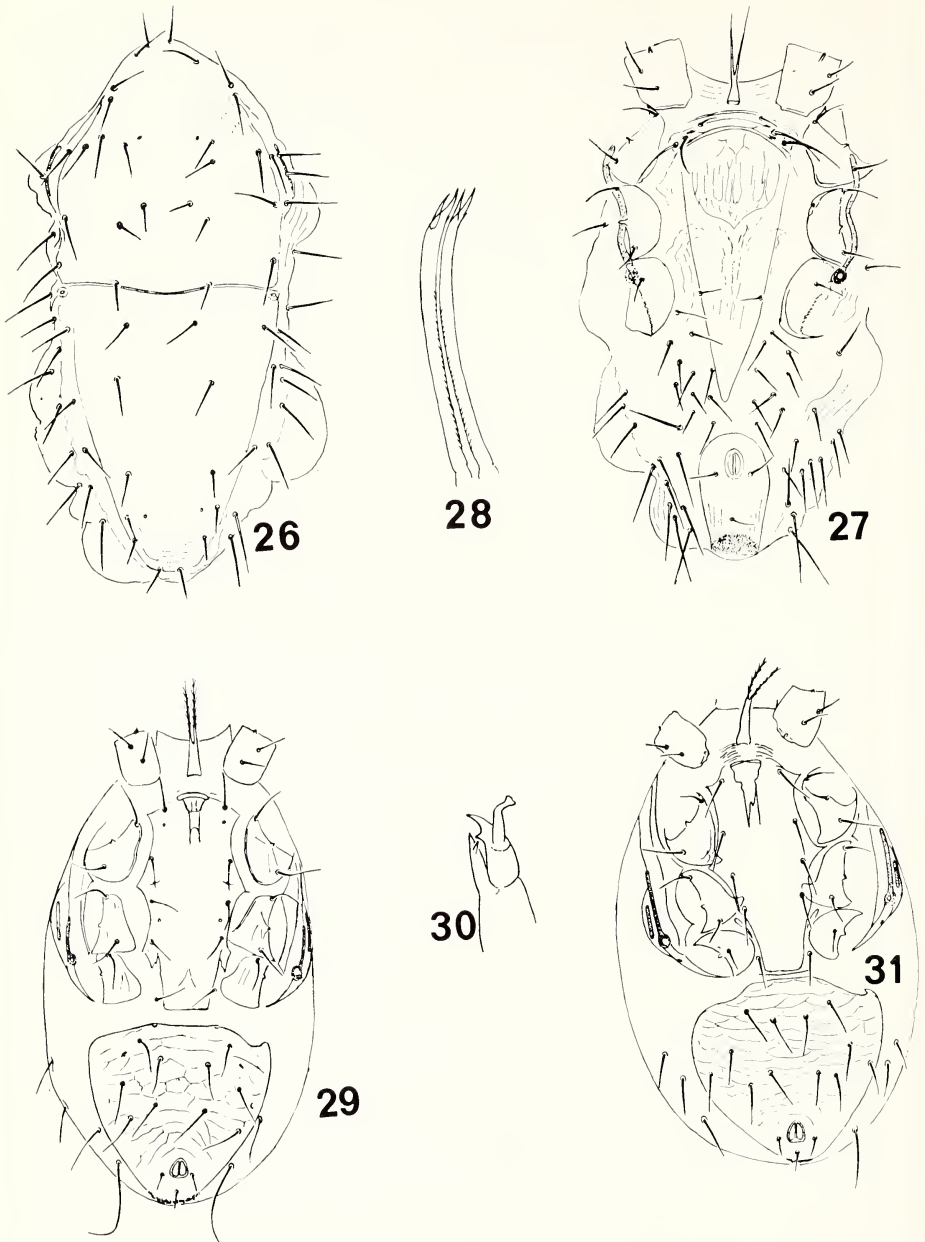
Asca aphidioides (Linnaeus)

Acarus aphidioides Linnaeus, 1758, Syst. Nat., Ed. 10,1: 758.

Asca aphidioides, Ryke, 1961, Zool. Anz. 167: 127; Hurlbutt, 1963, Acarologia 5: 484.

Remarks. Hurlbutt (1963:484) gave an excellent review of *A. aphidioides*. It most closely resembles *A. garmani* Hurlbutt by the presence of one pectinate seta on the posterior tubercle, the tridentate tectum and the strong pectinate setae on the dorsal plate, but the polygonal ornamentation of the dorsal plate is distinctive for *aphidioides*.

Distribution. It is common in forest litter in eastern United States, Nebraska, Missouri, Canada and Hawaii; and it is widespread in Europe. *A. aphidioides* has also been reported in *Peromyscus* nests in Maryland (Hurlbutt, 1963: 488). We found a single female in a bird's nest at Farmingdale, Long Island, New York, June 30, 1973 (D. M. Delfinado & M. Abbatiello, coll.).



Pellonyssus nidicolus, n. sp., Figs. 26–28. 26. dorsum of female; 27. venter of female; 28. chelicerae of female.

Blattisocius keegani Fox, Figs. 29–30. 29. venter of male; 30. chelicerae of male.

Blattisocius tarsalis (Berlese), Fig. 31. venter of male.

Asca nesioca Athias-Henriot

Asca nesioca Athias-Henriot, 1961, *Acarologia* 3: 463; Hurlbutt, 1963, *Acarologia* 5: 497.

Remarks. This species is distinguished by having two simple setae on each posterior tubercle, simple dorsal setae and tridentate tectum. Hurlbutt (1963:499) separates *A. nesioca* from the closely related *A. nova* Willman by the V-shaped notch on the anterior margin of the sternal plate, and arrangement of setae on the posterior dorsal plate.

Distribution. It is found in orchard soil and sod in Connecticut, Maryland, West Virginia, Oregon and in moss in Europe. A single female was taken in a bird's nest at Farmingdale, Long Island, New York, July 14, 1973 (M. D. Delfinado & M. Abbatiello, coll.).

Blattisocius keegani Fox

(Figures 29–30)

Blattisocius (sic) *keegani* Fox, 1947, *Ann. Entomol. Soc. Amer.* 40: 599.

Blattisocius keegani, Cunliffe & Baker, 1953, *Pinellas Biol. Lab. Publ.* 1: 7; McGraw & Farrier, 1969, *N.C. Agric. Expt. Sta. Tech. Bull.* 192: 55.

Melichares (*Blattisocius*) *keegani* Evans, 1958, *Proc. Zool. Soc. Lond.* 131: 209.

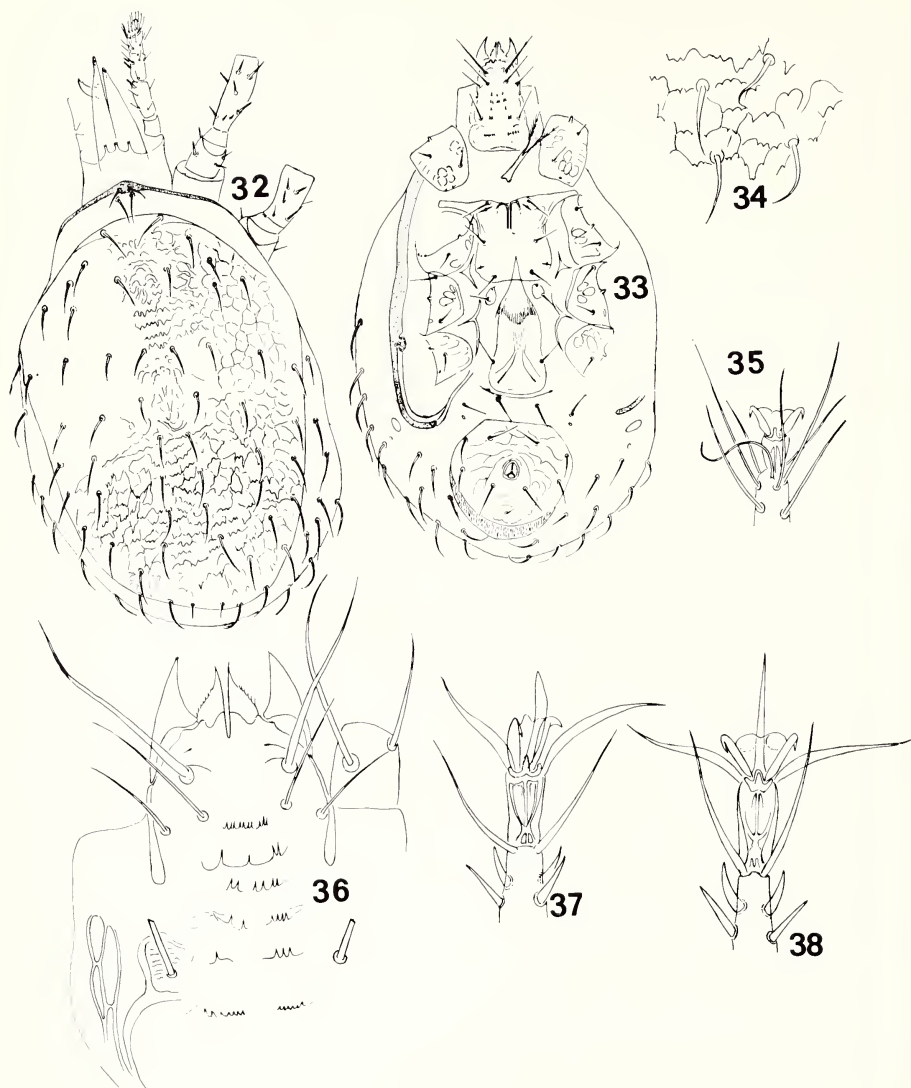
Remarks. *B. keegani* is immediately distinguished, in both sexes, by the long unidentate movable digit of the chelicerae, and very short peritreme which extends to about the middle of coxa III; in the male, the peritreme is accompanied distally by a small secondary peritreme as in figure 29 (accessory organ of Treat, 1966, figs. 3 & 4). We have seen the same structure in male *tarsalis* (Berlese), but it is situated laterad of the stigmata (fig. 31). Also, the male *keegani* has 5 pairs of long preanal setae on the ventroanal plate instead of 6 pairs as figured by McGraw & Farrier (1969).

Distribution. The female holotype was taken on *Rattus norvegicus* from Puerto Rico. Specimens have also been taken on rose in Mexico; on citrus and in *Neotoma* nest in Texas; in insect cultures in California, Delaware and Kentucky (Cunliffe & Baker, 1953); on *Ips* spp. in North Carolina (McGraw & Farrier, 1969), and in stored food products infested with various insects (Evans, 1958). The present collection contains a series of both sexes from nests of birds at Helderberg, New York, May 18, 1973 (M. D. Delfinado, coll.).

Cheiroseius hurlbutti, n. sp.

(Figures 32–38)

Female. Body length 574 μ , width 434 μ . Anterior gnathosomal (rostral) setae enlarged, lanceolate distally; internal palptrochanter seta long, whiplike; 6 rows of deutosternal teeth as figured, deutosternal groove lacking. Tectum trispinate with serrated tips. Movable digit of chelicerae bidentate; fixed digit with minute teeth medially. Corniculi stout, slightly convergent. Tritosternum with narrow, slender base, pilose laciniae. Sternal plate well sclerotized, with anterolateral margins extending between coxae I & II, anteromedian pair of lobes, 3 pairs of setae subequal in length. Metasternal setae on platelets. Genital plate with one pair of setae. Integument between genital and ventroanal plates with



Cheiroseius hurlbutti, n. sp., Figs. 32-38. 32. dorsum of female; 33. venter of female; 34. detail of dorsal reticulation; 35. empodium and claws of tarsus I; 36. venter of gnathosoma; 37. empodium and claws of tarsus II; 38. empodium and claws of tarsus IV.

4(?) indistinct platelets. Ventroanal plate striate in its anterior $\frac{2}{3}$, about as broad as long, with 3 pairs of preanal setae; 2 para-anal setae inserted below anus, about $2\frac{1}{2}$ times longer than postanal setae. Peritremes extending anterad to vertical setae, and tapered posteriorly below its origin at stigmata as far as metapodals. Peritrematal-exopodal plate broad beside and encircling posterior half of coxa IV; endopodals present

as narrow strips between coxae III & IV, II & III. Legs as for the genus; tarsi II-IV with median lobe of pulvillus slender, lanceolate as in figures 37, 38. Dorsal plate well sclerotized, reticulate-denticulate (fig. 34); all setae simple, pointed; each seta borne on a tubercle; chaetotaxy as figured, with 5 pairs of simple setae in the J series.

Male. Unknown.

Holotype. A unique female, Farmingdale, Long Island, New York, June 30, 1973, taken in a bird's nest (M. D. Delfinado & M. Abbatiello, coll.). Deposited in the New York State Museum & Science Service, Albany.

Remarks. The structures of the peritremes and pulvilli of tarsi II-IV, and the ornamentation of the dorsal plate are distinctive for this species. This mite is named for Dr. H. W. Hurlbutt of West Virginia University, Morgantown, West Virginia.

Arctoseius cetratus (Sellnick)

(Figures 39-42)

Lasioseius cetratus Sellnick, 1940, Göteborgs Vetensk.-Samh. Handl. (5). 6B: 99; Schweitzer, 1949, Res. Rech. Scient. Parc. Nat. Suisse 2 (n.s.): 53; Evans, 1958, Proc. Zool. Soc. Lond. 131: 186.

Arctoseius bispinatus Weis-Fogh, 1947, Nat. Jutlandica 1: 225.

Remarks. The characteristic features of *cetratus* are the bispinate tectum and the short peritremes which extend as far as the middle of coxae II. The specimens from Long Island fit the descriptions and figures of this species given by Evans (1958) except for the slightly broadened sensory setae on tarsus I and the variably shaped anal plate. In the specimens from Iceland (type locality) the sensory setae on tarsus I are not enlarged.

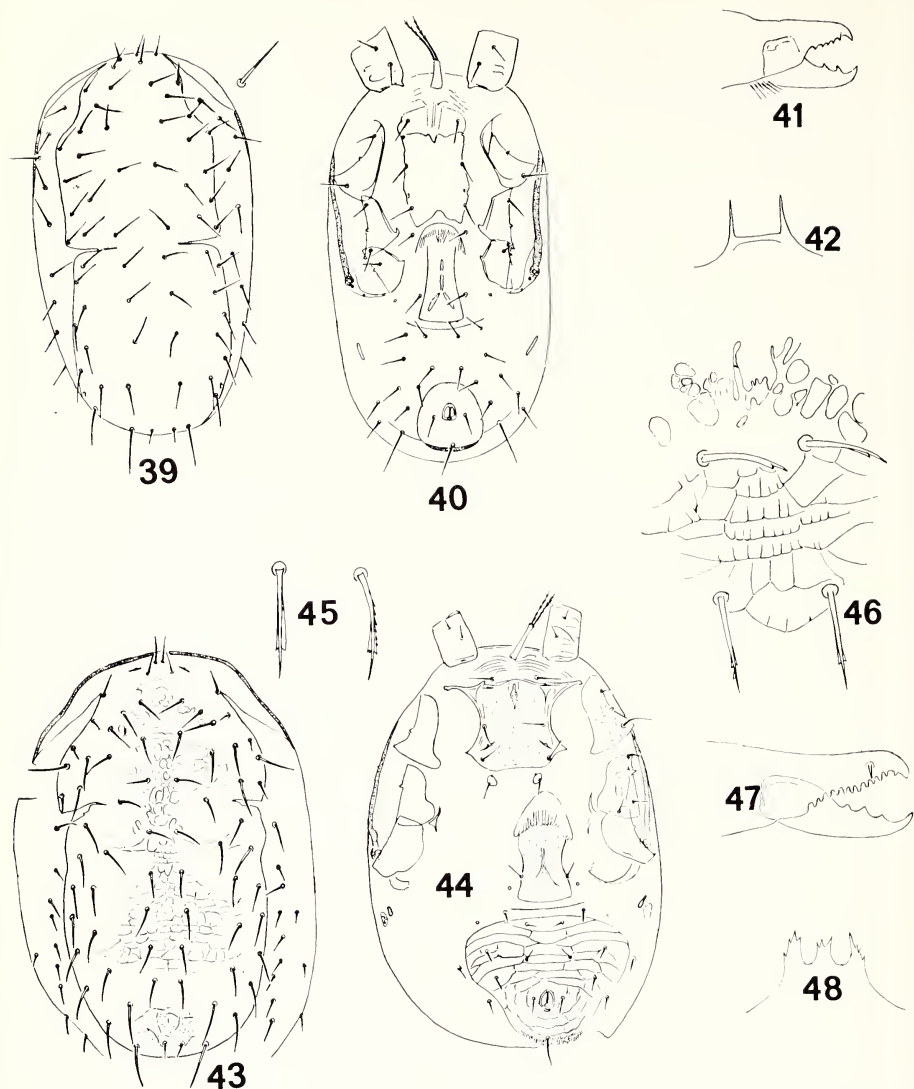
Distribution. *A. cetratus* has been recorded from Iceland, Denmark, Switzerland, and England, presumably found in soil. Females were taken in birds' nests at Farmingdale, Long Island, New York, July 14, 1973 (M. D. Delfinado & M. Abbatiello, coll.). Lindquist (1961:335) listed "North America" under its known distribution.

Lasioseius tridentatus n. sp.

(Figures 43-48)

Female. Body length 421 μ , width 319 μ ; shield 223 μ wide. Tectum trispinate, with serrated tips as figured. Fixed digit of chelicerae with 12 strong uniform-sized teeth; movable digit tridentate. Corniculi strong, parallel distally; gnathosomal (rostral) setae simple. Sternal plate punctate, with 3 pairs of setae, the first pair of setae situated outside the plate as figured. There is indication of sclerotization anterior to sternal plate. Metasternal setae on platelets; genital plate with 2 setae. Integument between genital and ventroanal plates with 4 platelets. Ventroanal plate reticulate-striate, with 4 pairs of preanal setae; 3 pairs of setae on integument beside plate. Peritrematal-exopodal plate narrow beside coxa IV; endopodals small between coxae III & IV. Peritremes extending anterad to vertical setae. Dorsal plate well sclerotized, reticulate; all dorsal setae except J_5 strong, serrate or serrate-lanceolate distally; J_5 small, simple; chaetotaxy as shown in figure 43, with 5 pairs of setae in dorsal J series. Legs as for genus, with pretarsi and small, rounded pulvilli.

Male. Unknown.



Arctoseius cetratus (Sellnick), Figs. 39–42. 39. dorsum of female; 40. venter of female; 41. chelicerae of female; 42. tectum of female.

Lasioseius tridentatus, n. sp., Figs. 43–48. 43. dorsum of female; 44. venter of female; 45. dorsal body setae of female; 46. detail of dorsal reticulation; 47. chelicerae of female; 48. tectum of female.

Holotype. Female, Farmingdale, Long Island, New York, July 7, 1973, in a bird's nest (M. D. Delfinado & M. Abbatiello, coll.). Deposited in the New York State Museum & Science Service, Albany. Three female paratypes with the same data as the holotype. Two paratypes will be deposited in U.S. National Museum collection.

Remarks. *L. tridentatus* is similar to *ometes* (Oudemans) by having the digit of the chelicerae tridentate and 4 pairs of preanal setae on the ventroanal plate, but the structure of the tectum and sternal plate is distinctive for *tridentatus*.

Gamasellodes bicolor (Berlese)

Gamasellus (*Digamasellus*) *bicolor* Berlese, 1918, Redia 13: 135.

Digamasellus circuliiformis Leitner, 1949, Zbl. Gesamtgeb. 3: 59.

Gamasellodes major Athias-Henriot, 1961, Acarologia 3: 486.

Digamasellus shealsi Costa, 1962, Ann. Mag. nat. Hist. (13) 4: 486.

Iphidozercon bicolor Hirschman, 1962, Acarologie 5: 46.

Leioseius bicolor Bernhard, 1963, Beitr. Syst. Okol. Mitteleur. Acarina 2: 105.

Gamasellus americanus German, 1948, Conn. Agric. Expt. Sta. Bull. 520: 9; Hurlbutt, 1970, Acarologia 7: 475 (as *Gamasellodes (bicolor) americanus*). *New synonymy* by Hurlbutt (pers. comm.).

Gamasellodes bicolor, Hurlbutt, 1970, Acarologia 7: 474.

Remarks. According to Hurlbutt (pers. comm.) this species has been mistaken for a *Digamasellus* by some workers, but it is an ascid rather close to *Leioseius* and *Asca*. As in other ascids, the metasternal setae arise from the membrane; the circular ventroanal plate is very characteristic.

Distribution. *G. bicolor* appears to be a widely distributed mite in Europe; it has been collected from mole rat nests in Israel (as *shealsi*); and from orchard sod and bark of apple trees in Connecticut. We found this species to be a common ascid mite in nests of birds at Farmingdale, Long Island, New York, June 30 & July 14, 1973 (M. D. Delfinado & M. Abbatiello, coll.).

Digamasellidae

Digamasellus sp. nr. *neocornutus* Hurlbutt, 1967.

Remarks. A single female found in a bird's nest collected from Farmingdale, Long Island, New York, July 14, 1973 (M. D. Delfinado & M. Abbatiello, coll.) is probably *neocornutus*, but in the absence of male specimens the identity is uncertain.

Veigaiaidae

Veigaia sp. nr. *mitis* (Berlese), 1916.

Remarks. The single female in a bird's nest collected at Farmingdale, Long Island, N. Y. July 14, 1973 (M. D. Delfinado & M. Abbatiello, coll.) is probably *mitis*, differing only in size. Our specimen is much smaller than those we have examined in the USNM collection, the length of the idiosoma being 446 μ . The type of *mitis* is 508 μ long; specimens from Maryland are 500–530 μ long (Hurlbutt, 1965:606).

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